

Ukulele Music Theory Part 2 – Keys & Chord Families

By Pete Farrugia BA (Hons), Dip Mus, Dip LCM

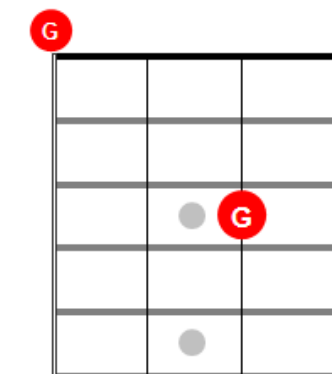
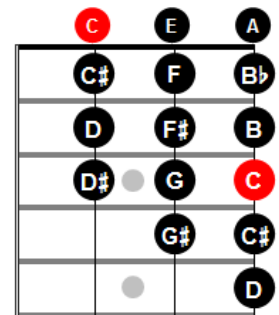
This lesson assumes that you are using a ukulele tuned to the notes G, C, E and A.

Ukulele Notes

In lesson 1, we introduced the sequence of 12 notes, which repeats up and down the full range of musical notes. Notes with the same name sound similar, like higher and lower versions of the same note. Some notes have two names – these are the sharp (#) and flat (*b*) notes.

A	A# Bb	B	C	C# Db	D	D# Eb	E	F	F# Gb	G	G# Ab	A	and so on...
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The lowest sounding note on the ukulele is C, the open third string. The next note, on the first fret is C# (also Bb), then D, and so on until we reach the twelfth note, B on the first string second fret. The next note is a higher version of C, and then the pattern repeats itself.



What about the fourth string? When played open, the note is G, but this is exactly the same note as the G on the second string at the third fret. So the fourth string doesn't actually give us any notes that are not also available elsewhere.

Some ukulele players tune their fourth string an octave lower – this is called low G tuning. That greatly extends the range of notes that can be played on the ukulele, which is very useful for playing melodies, and soloing.

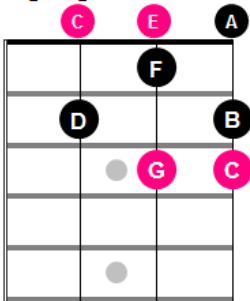
Keys and Transposition

Melodies, for example the tunes of the songs that we sing, come from scales, especially the major scale. A major scale can start on any note. This gives us 12 **keys** in which any piece of music can be played. Any tune can be played in any key. If we know a tune in the key of C Major, then we can play it in the key of C# Major simply by moving everything up one semitone. On the ukulele this is very easy to do – just move all of the notes up by one fret.

If the same tune is moved up a second fret, then the new key is D Major. So any piece of music can be moved to a different key, simple by moving all the notes by the same number of semitones. Musicians call this **transposing** the music.

Chord Families – Harmonising The Major Scale

C Major Scale,
with C Major triad
highlighted



Chords come from scales. For example, the first, third and fifth notes of the C Major Scale (C, E and G) give us the C Major triad, the three notes that are found in the C Major chord.

It seems that notes taken from the major scale sound nice together when they are separated by one note. For example we skipped the second and fourth notes (D and F) to build the C chord.

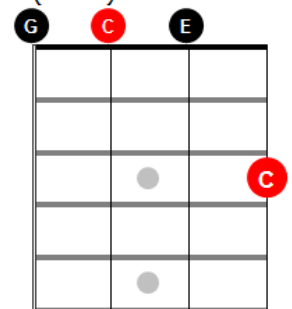
The **C Major** chord, or “**C**” for short is chord 1 in the key of C Major. We use Roman numerals for chord numbers. If the chord is a major chord, then we use upper-case numeral, e.g. **I**. If the chord is not a major chord, then we use lower-case, e.g. **ii**.

What if we apply this note-skipping method to the other notes of the scale? We already know that starting on the first note C, leads to the C Major chord. If we start at the second note D, skip the E, play the F, skip the G and play the A, that gives us D, F and A, or the D Minor triad. So chord 2 (**ii**) in the key of C is **D Minor**.

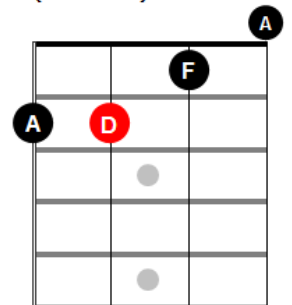
Minor chords are commonly abbreviated with a lower-case “m”.

Note 3 of the C Major scale is E. If we start with E, then skip the F, play the G, skip the A and play the B, the resulting triad E, G and B. This gives us chord **iii**, **E Minor**, or Em.

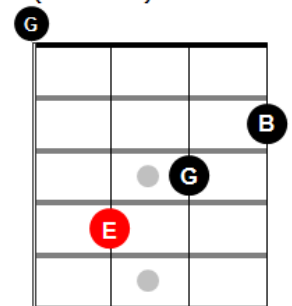
C Major Chord
(C - I)



D Minor Chord
(Dm - ii)



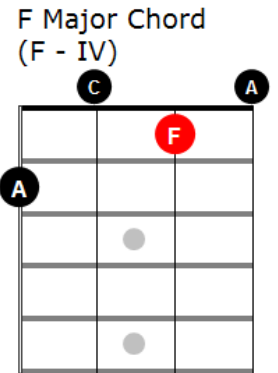
E Minor Chord
(Em - iii)



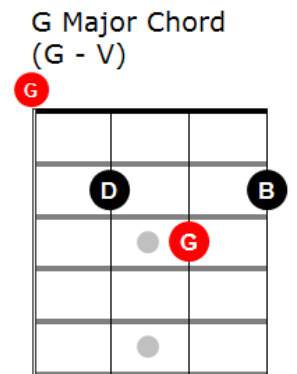
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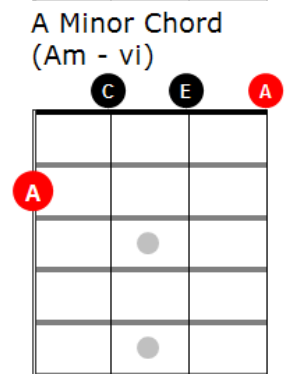
Note 4 of the C Major scale is F. Our note-skipping method results in the triad F, A and C, which is the **F Major** chord, that is chord **IV** in the key of C Major.



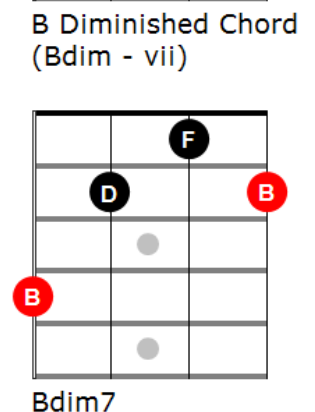
Note 5 of the C Major scale is G. This gives us the triad G, B and D, which is the **G Major** chord, chord **V** in the key of C Major.



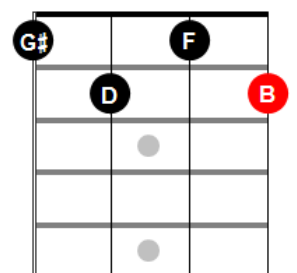
Note 6 of the C Major scale is A. The triad is A, C and E, the **A Minor** chord, chord **vi** in the key of C Major.



Note 7 of the C Major scale is B. The triad B, D and F is an unusual chord called **B Diminished**. Some call it **B Half Diminished**, to distinguish it from the **B Diminished Seventh** chord. This is a dark, dissonant sounding chord, and it is extremely rare to find it used in pop music. It is chord **vii** in the key of C Major.



N.B. Don't confuse the **Bdim** chord with **Bdim7**! Bdim7 isn't particularly associated with the key of C Major, or any other specific key. It's a useful, pleasant-sounding "passing" chord, and can be played like this.



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This gives us a “family” of chords, that come from the C Major scale. They can be used to harmonize with, or accompany melodies played or sung using the C Major scale.

The chord types from I to vii can be remembered like this:

MAJOR – MINOR – MINOR – MAJOR – MAJOR – MINOR - DIMINISHED

Chords With Four Notes

So far, the chords have all been triads, containing three notes. Why stop at three? What happens when we add a fourth note to the chord. For example with chord I, C Major, if we start with the triad C, E and G, then skip the next note A, we add the seventh note from the scale B to the chord. This gives us a new chord called C Major Seventh. It sounds like a more sophisticated, *jazzier* version of the C chord. It can be written like this; CM7, or CMaj7.

Chord ii D Minor (Dm), becomes **D Minor Seventh**, or **Dm7** when the fourth note C is added.

Chord iii E Minor (Em), becomes **E Minor Seventh**, or **Em7** when the fourth note D is added.

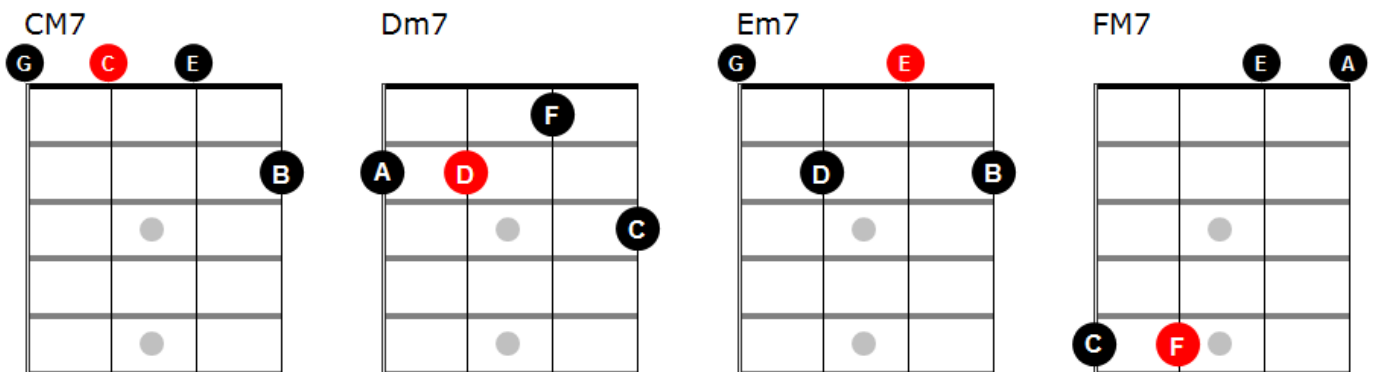
Chord IV F Major (F), becomes **F Major Seventh**, or **FM7** when the fourth note E is added.

Chord V G Major (G), becomes **G Dominant Seventh**, or **G7** when the fourth note F is added. So now we know that seventh chords are usually (but not always) the fifth chord in a major key.

Chord vi A Minor (Am), becomes **A Minor Seventh**, or **Am7** when the fourth note G is added.

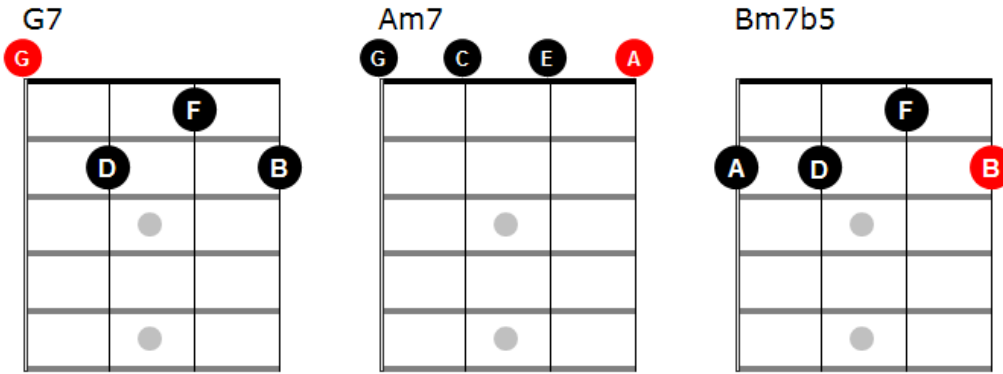
Chord vii, the extremely rare B Diminished (Bdim), becomes **B Minor Seventh Flat Fifth**, or **Bm7b5** when the fourth note A is added. Unlike Bdim, Bm7b5 is a commonly-used chord, for example in George Gershwin’s song “Summertime”, and Gloria Gaynor’s karaoke classic “I Will Survive”.

Here are the four-note chords in the key of C Major...



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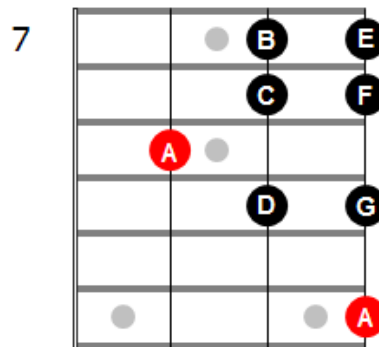
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That makes fourteen chords in our family of chords in the key of C major. Any melody that uses only notes from the C Major scale can be harmonised with these chords. Any note of the scale has a choice of chords that will harmonise with it. For example the note D can be found in all of these chords: Dm, Dm7, Em7, G, G7, Bdim and Bm7b5. Making wise choices for which chords to accompany notes is an essential part of the songwriter or composer's skills.

All major scales have a relative minor. The relative minor of C Major is the A Natural Minor scale. This scale has the same notes as C Major, but it starts and ends on A instead of C. That means that the family of chords we built for the key of C Major can also be used to harmonise songs in the key of A Minor.

A Natural Minor Scale



This method of building a family of chords around a major scale is called **Diatonic Harmony**.

Other Keys

In this lesson, we used C Major as an example of a key. There are actually 12 major keys. The same principles that applied to C Major, apply equally to all of the other keys. Take the key of D Major. If we apply the major scale formula

TONE - TONE - SEMITONE - TONE - TONE - TONE - SEMITONE

to G, this gives us the notes of the D Major scale: D, E, F#, G, A, B, C# and D. Next, we apply our chord type formula

MAJOR – MINOR – MINOR – MAJOR – MAJOR – MINOR – DIMINISHED

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And this results in the following triad chords...

D - Em - F#m - G - A - Bm - C#dim

Add the fourth note to each triad, and we get these chords (i.e. the same chord types as with the key of C Major)...

DM7 - Em7 - F#m7 - GM7 - A7 - Bm7 - C#m7b5

Analyse the chords of one of your favourite ukulele songs. Write down the chord numbers. Then, transpose it to a different key, by matching the chords of the new key to the chords of the original key by their number.

For example if a song in the key of C Major contains the chords C, F and G (chords I, IV and V) then the same song would have the chords D, G and A in the key of D Major. An example is "Twist And Shout", originally a hit by the Isley Brothers, and famously covered by the Beatles.

Transposing the chords of a song helps you find a key that suits your singing voice better, so it's a really useful skill to have.

What's Next?

Now it's your turn. Pick a key, work out the major scale, and build the family of chords that goes with it. Perhaps try the key of G Major first?